

NON-PUBLIC?: N
ACCESSION #: 9212010294
LICENSEE EVENT REPORT (LER)

FACILITY NAME: D. C. Cook Nuclear Plant - Unit 1 PAGE: 1 OF 04

DOCKET NUMBER: 05000315

TITLE: Turbine Trip/Reactor Trip Due to the Turbine Thrust Bearing Wear
Device not Being Set Following Maintenance
EVENT DATE: 10/28/92 LER #: 92-012-00 REPORT DATE: 11/25/92

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 016

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Joel S. Wiebe - Safety and TELEPHONE: (616) 465-590
Assessment Superintendent

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On October 28, 1992, at 0253 hours, with Unit One at 16 percent Reactor Thermal Power, a Turbine Trip/Reactor Trip occurred. The trip occurred during a power increase to 30 percent to perform a routine calometric test and was the result of a signal from an erroneously set main turbine thrust bearing wear device.

The erroneous signal was the result of the thrust bearing wear detector setpoint not being set, after maintenance, such that a turbine shaft displacement of approximately six mils would result in a Turbine Trip Signal.

Following the Reactor Trip, all automatic protection responses, including reactor trip and its associated actuations were verified to have functioned properly as a result of the reactor trip. The Unit was stabilized in Hot

Standby (Mode 3) at 0310 hrs on October 28, 1992.

Prior to restarting Unit One, the main turbine thrust bearing wear detector was adjusted to the proper setpoint. To prevent recurrence, administrative guidelines are being developed to provide positive control on work order activities related to major turbine inspections.

END OF ABSTRACT

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Conditions Prior to Occurrence:

Unit One in Mode 1 (Power Operation) at a power level of approximately 16 percent.

Description of Event:

On October 28, 1992, , with Unit One at 16 percent Reactor Thermal Power, a Turbine Trip/Reactor Trip occurred. The trip occurred during a power increase to 30 percent to perform a routine calometric test and was the result of a signal from an erroneously set main turbine thrust bearing wear detector (EIIS:JJ/DET).

During the course of the July 1992 work on Unit 1 High Pressure Turbine (EIIS:TA) the Thrust Bearing Wear Detector (TBWD)(EIIS:JJ/DET) was removed and reinstalled. The job order (work order) directing the work on the High Pressure Turbine (EIIS:TA) did not contain a specific job order activity for the removal or reinstallation of the TBWD (EIIS:JJ/DET). Additionally, no action request was generated by the Turbine Coordinator to request post-maintenance testing after the TBWD (EIIS:JJ/DET) was reinstalled.

On October 4, 1992 the Plant Engineering Department attempted to perform the Turbine Thrust Bearing Wear and Low Bearing Oil Pressure Trip Test (section 5.7 of 1-EHP 6040 PRE.099). The test was aborted because the wear detector switches were not functional. The I&C crew supervisor providing support for turbine instrument work was contacted to resolve the problem with the wear detector switches. At this time both the I&C crew supervisor and the turbine system engineer became aware that the TBWD (EIIS:JJ/DET) may not be properly adjusted. At this time the I&C crew supervisor and the system engineer agreed that no additional action request would be generated, and that the adjustments would be made under an existing Job Order (work order) to perform a lineup of the main turbine Electrohydraulic Control (EHC) system (EIIS:TG). The work was to be performed without generating an additional action request.

On October 24, 1992 the I&C Production Supervisor canceled the EHC lineup. The decision to cancel the lineup was made based upon the fact that no known EHC system (EHS:TG) problems had been identified. The I&C Production Supervisor was not aware of the intention to make any needed adjustments to the TBWD (EHS:JJ/DET) under the EHC lineup job order.

The turbine roll began on October 27 at 2251 hours. The unit was paralleled at 01:05 on October 28, 1992 and power was being increased to 30% to perform a calometric. At 0253 hours on October 28 the Unit One reactor tripped from 16% power from a Turbine Trip caused by the Main Turbine Thrust Bearing Wear Trip. This was the initial power ascension following refueling. Reactor Protection System (RPS)(EHS:JE/RPS) occurred from the main turbine trip above 10% power. All systems functioned as designed following the trip. The unit was stabilized in Hot Standby (Mode 3) at 0310 hours on October 28, 1992.

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Cause of Event:

The erroneous signal was the result of the thrust bearing wear detector setpoint not being set, after maintenance, such that a turbine shaft displacement of approximately six mils would result in a Turbine Trip signal.

The primary contributing factor related to this event was the failure to document the need for a setpoint adjustment job order (work order) activity to perform post-maintenance testing of the Turbine Thrust Bearing Wear Detector.

Analysis of Event:

This event is reportable pursuant to 10CFR 50.73(a)(2)(iv), as an event that resulted in an unplanned automatic actuation of the Engineered Safety Features, including Reactor Protection System. All automatic protection responses, including reactor trip and its associated actuations were verified to have functioned properly as a result of the reactor trip signal. As a result, it is concluded that the event did not constitute an unreviewed safety question as defined in 10CFR 50.59(a)(2) nor did it adversely impact the health and safety of the public.

Corrective Action:

Prior to restarting Unit One, the main turbine thrust bearing wear detector was adjusted to the proper setpoint. To prevent recurrence, the following Plant preventive actions have been developed:

1. Procedures for documenting and tracking outage work performed on Cook Plant turbines and generators will be drafted. The procedure will contain instructions to initiate corrective action requests to ensure the operability/functionality of instruments which may have been affected during turbine or generator work. Completion of this action is scheduled for December 31, 1993, or prior to the next scheduled turbine generator outage.

2. Administrative guidance will be drafted and implemented on the use of the NPM system to ensure that plant components affected by work coordinated through the affected Plant Department(s) will be evaluated to confirm operability/functionality prior to being placed in service. Completion of this action is scheduled for June 1, 1993.

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3. Administrative guidance will be provided to the plant departments on the use of the NPM system to identify and track the work activities necessary to confirm that instrumentation is operable/functional prior to being placed into service. Completion of this action is scheduled for December 18, 1992.

4. A review of all Unit 1 and Unit 2 turbine preoperational/start up test requirements will be performed to determine if adequate measures are identified to ensure reliable system start up. These reviews are scheduled for completion by December 31, 1993 or prior to the next turbine generator outage. An action plan will be developed to address any deficiencies identified by the review.

5. A review will be performed on Turbine Start up activities for both Unit 1 and Unit 2 to determine if all of the appropriate preoperational/start up actions (eg valve lineups and surveillance tests) are performed to ensure reliable turbine start up. An action plan will be developed to address any deficiencies identified by the review. Completion of this action is scheduled for December 31, 1993 or prior to the next turbine generator outage.

Failed Component Identification:

There were no failed components associated with this condition.

Previous Similar Events:

Similar LER's: U1-86-023

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616 465 5901
AEP

INDIANA
MICHIGAN
POWER

November 25, 1992

United States Nuclear Regulatory Commission
Document Control Desk
Rockville, Maryland 20852

Operating Licenses DPR-58
Docket No. 50-315

Document Control Manager:

In accordance with the criteria established by 10 CFR 50.73 entitled
Licensee Event Report System, the following report is being submitted:

92-012-00

Sincerely,

A. A. Blind
Plant Manager

/sb

Attachment

c: D. H. Williams, Jr.
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